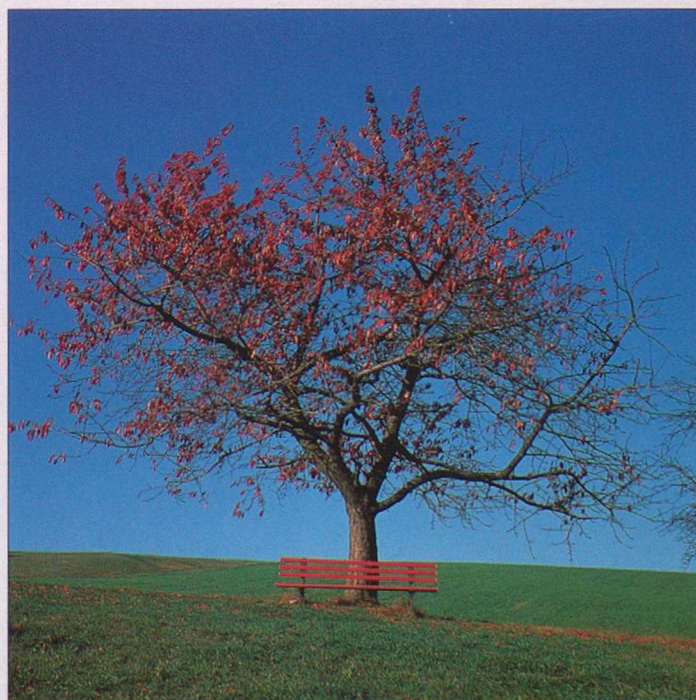
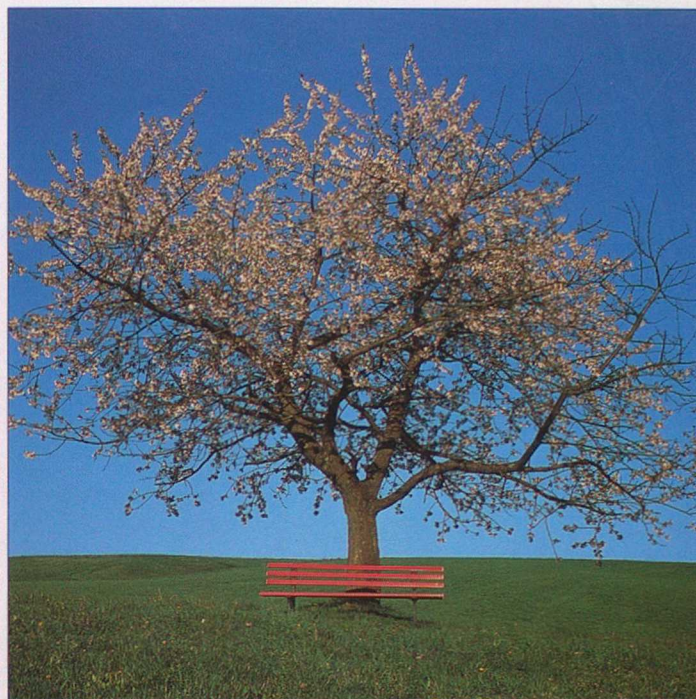




Climatological Observers

NEWSLETTER

Observations Provision Branch



CLIMATOLOGICAL OBSERVER'S NEWSLETTER
FOR
ENGLAND AND WALES

ISSUE NO. 24

FEBRUARY 1995

Met. O (OP)1a
Observation Provision Branch
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EDITORIAL

1994 will obviously mean different things to different people but to George, Shirley and myself, it will go down as a period of great change within the Met. Office. Back in late 1993 there was a move towards an increase in the number of Climatological Network managers with the recruitment of a third team member (me) in order that all inspections could be conducted "in house". However, with the Met. Office "Agency Status" taking hold and the dawning realisation that we have to make ends meet to survive, we are now facing further changes. One change that will take effect this summer is the amalgamation of the Climatological and Auxiliary Networks inspection programmes. This will mean that you may have a visit from one of our colleagues from the Auxiliary Network, namely John Higgins, Andy Moffat or John Hayhurst. They work in the same office as George, Shirley and me and are fully conversant with the workings of the Climatological Network. I can assure you that they are as friendly and as house trained as we three! Like us, it will be their aim to encourage the high standard of observations we receive from Climatological stations. Fortunately, this is already the case for the majority of stations and we, the inspectors, are very heartened and grateful for the level of enthusiasm and dedication which is shown by you, the observer. **Thank you.**

In this ever competitive world, you will have noticed only small changes in the Network, with the loss of the annual wall planner and the shortening of the Co-operating Observers Course to 3½ days. It is planned that the courses will continue in 1995 and 1996 but beyond this it is very dependent on their continuing popularity with the observers. It would be a shame if these courses were lost in favour of distance learning packages being sent to individuals. This, in our opinion would be a retrograde step. There are still places available on the courses for 23-26th May 1995 and 11-14th July 1995. If you are interested please call either George, Shirley or me.

The introduction of the Telephone Information Service (TIS) and revised reporting time for Health Resort reports now appear to have settled down and the minor hiccups have been sorted out.....unless you feel differently. Please let us know.

After a year that saw further records broken and what turned out to be a very mild end to the year, you will find several interesting articles relating to possible climate change in this newsletter. Of interest is the comprehensive review of 1994 from Cedric Roberts at Halesowen, Michael Betts tells us about life on the small Welsh island of Skokholm, whilst Tim Trask from Westonbirt puts forward his theories regarding surface mounted rain gauges. Thanks go to all our contributors.

Please remember that we are here to help and if you don't tell us of shortfalls or problems we can't sort them out. Apart from anything else we like to talk to you. It also keeps us in touch with the stations other than at the three yearly visit. Finally a plea (duplicated elsewhere in this issue) for articles for next years newsletter. If you have a project or pet theory then why not share it with the rest of the Climatological Network observers?

George, Shirley and I look forward to meeting many of you in the coming year during our field trips or if you are attending a training course. Regards from us all.

Phil.

CONTACT POINTS WITHIN OBSERVATION PROVISION BRANCH

SURFACE NETWORKS GROUP

Section: Climatological Station Management

Function: Liaison with observers. Queries on running a climatological station. Supplies of stationery, forms, equipment, sunshine cards and pocket registers. Site visits and changes.

Staff: HSO George Spence Ext. 4456
 HSO Philip Wills Ext. 4667
 SO Shirley Hopkins Ext. 4522

Address: Meteorological Office
 Met O (OP)1a
 Room 105, London Road
 Bracknell, Berks. RG12 2SZ

Section: Solar Radiation Network Management

Function: Administration and inspection of radiation stations.

Staff: SSO Mike Collins Ext. 4636

Address: Meteorological Office
 Met O (OP)1b
 Room 104, London Road
 Bracknell, Berks. RG12 2SZ

COMPUTER DATA ARCHIVING GROUP

Section: Quality Control

Function: collection and quality control of climatological data.

Staff: HSO Anne Tunnicliff Ext. 6819
 SO Mike Underdown Ext. 6634
 ASO Dave Forrester Ext. 6822
 ASO John Spafford Ext. 6823
 ASO Jan Lewandowski Ext. 6824

Address: Meteorological Office
 Met O (OP)3a
 Room 137, London Road
 Bracknell, Berks. RG12 2SZ

Section: Planning and Software development.

Staff: HSO Margaret Elms Ext. 6813

Address: Meteorological Office
 Met O (OP)3b
 Room 133, London Road
 Bracknell, Berks. RG12 2SZ

Telephone: Bracknell (01344) 85 plus the extension number.
 Fax: Bracknell (01344) 856412

The rise and rise of global warming

Robert Matthews

SCEPTICS holding out against the idea that the world is warming will have a harder time dismissing the latest predictions from British meteorologists. A team at the Hadley Centre for climate prediction and research, based at the Meteorological Office in Bracknell, has developed a computerised climate model that has accurately reproduced past fluctuations in the Earth's temperature - the first time a model has succeeded in doing this.

This breakthrough counters the sceptics' arguments that computer models cannot be trusted. It also confirms fears that the world is warming at an unprecedented rate.

Computer projections of increases in global temperature have been the main justification for calls to limit emissions of greenhouse gases such as carbon dioxide and methane. Such projections are the product of general circulation models (GCMs), complex computerised representations of the Earth's atmosphere, oceans and land and the interactions between them, which run on powerful supercomputers.

By changing the chemical composition of the atmosphere in these models to mimic the impact of industrial pollution, researchers can - in principle at least - gain an insight into its likely effects. Yet despite the apparent sophistication of GCMs, they have until now had one embarrassing flaw: they have been unable to reproduce the past record of the Earth's temperature. This has been a gift to sceptics of global warming who argue that this failure undermines confidence in GCMs' predictions of future temperature rises.

Now the team at the Hadley Centre has succeeded in reproducing the global trend in temperature dating back to 1860, when accurate measurements first became available. The GCM is the first to take into account the effect of pollution by sulphate particles which are injected into the atmosphere by burning fossil fuel. These particles reflect some of the Sun's heat back into space.

Scientists have long thought that these sulphate particles have the power to

cancel out around 25 per cent of the global warming that results from the heat-trapping effects of greenhouse gases. The Hadley team's model showed the cooling to be slightly greater than expected, offsetting about 30 per cent of greenhouse warming.

Even so, the model still predicts a net global warming, on the "business as usual" assumption that emissions continue at their present rate, of around 0.2 °C per decade. "Although somewhat lower than the level predicted by cruder models, it is still twice as fast as anything experienced in recorded history," points out David Bennetts, research co-ordinator at the Hadley Centre. "It is also twice as fast as the level at which we can expect to see

War. In both cases the first impact on the atmosphere was an injection of sulphate particles triggered by increasing fossil fuel consumption. This offset the warming effect of the carbon dioxide for some years causing a plateau in the temperature record. However, in each case the accumulation of carbon dioxide ultimately overcame this cooling effect leading to an overall rise in temperature.

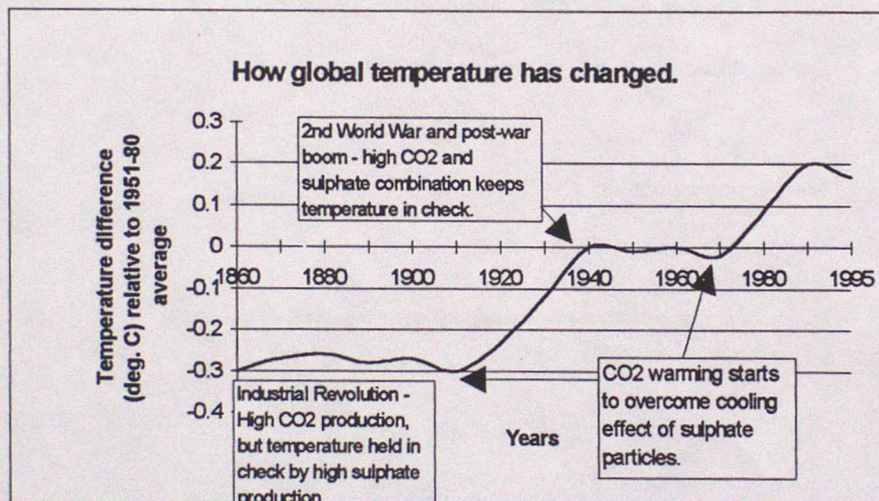
For the future, the GCM also suggests that it will take somewhat longer for the global warming signal to rise above the natural "noise" of ± 0.2 °C in global temperature. According to the Hadley Centre team unequivocal evidence is unlikely to emerge for at least another decade.

The ability of the GCM to reproduce the past temperature record deals a blow to claims that changes in the Sun's output can entirely account for observed changes in global temperature. "There is no evidence for solar variability over the 15 years during which it has been accurately monitored and the correlation with the temperature record breaks down over long time scales," says Bennetts. "Our GCM results now suggest that we don't need it to explain the past temperature record."

Other researchers have welcomed the new results. "They are very encouraging," says Lennart Bengtsson, director of the Planck Institute for Meteorology in Hamburg, one of the leading international centres for GCM research. "What it shows is that as the model becomes more sophisticated, you do get much better results."

The Hadley team stresses that its results cannot be taken as the final word: "It will be five years before we have reliable data about sulphate levels in the atmosphere and we have still to fully understand the effects of clouds on global warming," says Bennetts.

The article above first appeared in the 26 November 1994 issue of *New Scientist*. Re-produced here with kind permission of IPC Magazines Ltd.



significant impacts on the biosphere."

Unlike earlier predictions, however, this result comes from a model which correctly mimics the past record of global average temperature, bringing a much needed boost to confidence in its reliability.

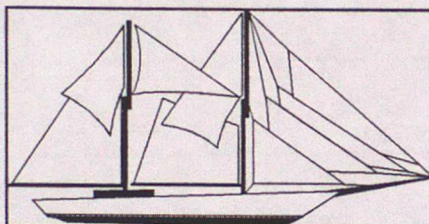
The Hadley team found that by including estimates of past sulphate production in the model they can reproduce all the major trends in global temperature since the middle of the last century. These show a period of relatively constant temperatures from 1860 to 1920, a steep rise of around 0.3 °C during the 1930s and 1940s, then another period of relative stability until 1970. Since then temperatures have climbed more or less continuously and are currently around 0.3 °C higher than the 1951 to 1980 average.

The results from the GCM suggest that these trends are the result of industrialisation in Western Europe and the US in the late 19th century and the boom in industry during the Second World

SKOKHOLM by Michael Betts, Warden.

It is late November and the Stevenson's screen has just been packed away for the winter as we prepare to evacuate the island until next March. Strong to gale force south-westerlies have driven in off the Atlantic over the past few days, building up a hefty swell. At five to two and ten to six each day we drop whatever we're doing to listen to the Shipping Forecast. We're hoping the predicted shift in wind to the west will prove accurate so that the boat can get in with a gang of volunteers to take us off with the usual mountain of equipment and belongings at the small, south-eastwards-facing harbour.

Skokholm is a small island lying a couple of miles off the south-west tip of Pembrokeshire. Its name is famous in natural history circles for its seabirds and migrants and the many books of its tenant between the wars, Ronald Lockley. He wrote such titles as 'The Island', 'Dream Island' and 'Letters from Skokholm' of life here with his small family, his farming endeavours, the birds, seals and rabbits, the vagaries of seas and weather. Lockley created Britain's first Bird Observatory at Skokholm in 1933 and a succession of wardens have lived here ever since (except for the war), employed by Dyfed Wildlife Trust who manage the island as a Site of Special Scientific Interest valued chiefly for its seabirds. Up to 15 visitors per week stay in the 18th century farm buildings of the Observatory to enjoy Lockley's 'simple life' (no electricity) and the same birds, animals and flowers. The management plan which backs this up is based on all the scientific information available (and Skokholm must be one of the most intensively studied islands in the world), including weather records which date back to the 1950's. Analysis of long-term vegetation change is greatly assisted by such long runs of information on maximum, minimum and mean temperatures, wind and rainfall. Maritime influence on such a small land mass (240 acres) is profound and salt-tolerant Thrift dominates the more exposed areas producing a soft, peaty soil ideal for the thousands of burrowing Manx Shearwaters and Puffins - and rabbits, of course. Frosts are rare but gales aren't, and cliff-nesting birds such as Peregrines, Choughs and Ravens succeed or



fail according to the direction of spring gales. Rainfall is lower than on the mainland, due, presumably again, to Skokholm's small size, and we often sit in sunlight gazing at smoking blue-black skies over the mainland. 1993 did bring heavy rainfall though, in May, June and July, giving us ample water for domestic use - we all wash in rainwater and drink spring water - but killing many gull chicks and flooding Shearwater burrows, submerging eggs, drowning young chicks and driving out adults. The older, more experienced birds (Shearwaters may live to be well over 30 years old) will have the better nest-sites on ground less prone to flooding, and will have better success at steering their single offspring through the 17 week egg-to-fledgling period.

Bracken has spread dramatically since the end of farming but is fortunately intolerant of salt so is restricted to the more sheltered eastern end of the island, with stunted patches wherever an outcrop provides shelter from the salty south-westerlies. Trees are a luxury of course, all introduced - a handful of Sycamores crouching in the lee of the old farm buildings and a few scattered, rabbit-proof Elders - apart from a creeping dwarf form of Willow, and the bracken provides cover for weary migrating birds. Westerly winds in Spring and Autumn mean we see very few migrants, while clear night skies with easterly winds bring some of the many hundreds of thousands of birds moving north or south over Britain and Europe drifting our way, and early morning fog or drizzle will force them down. On one memorable October day in 1988, when the fog was so dense it barely got light, we estimated that 1200 Siskins, tiny finches migrating from Scandinavia, had been forced down, clustering on the seeding Ragwort to re-fuel before moving on.

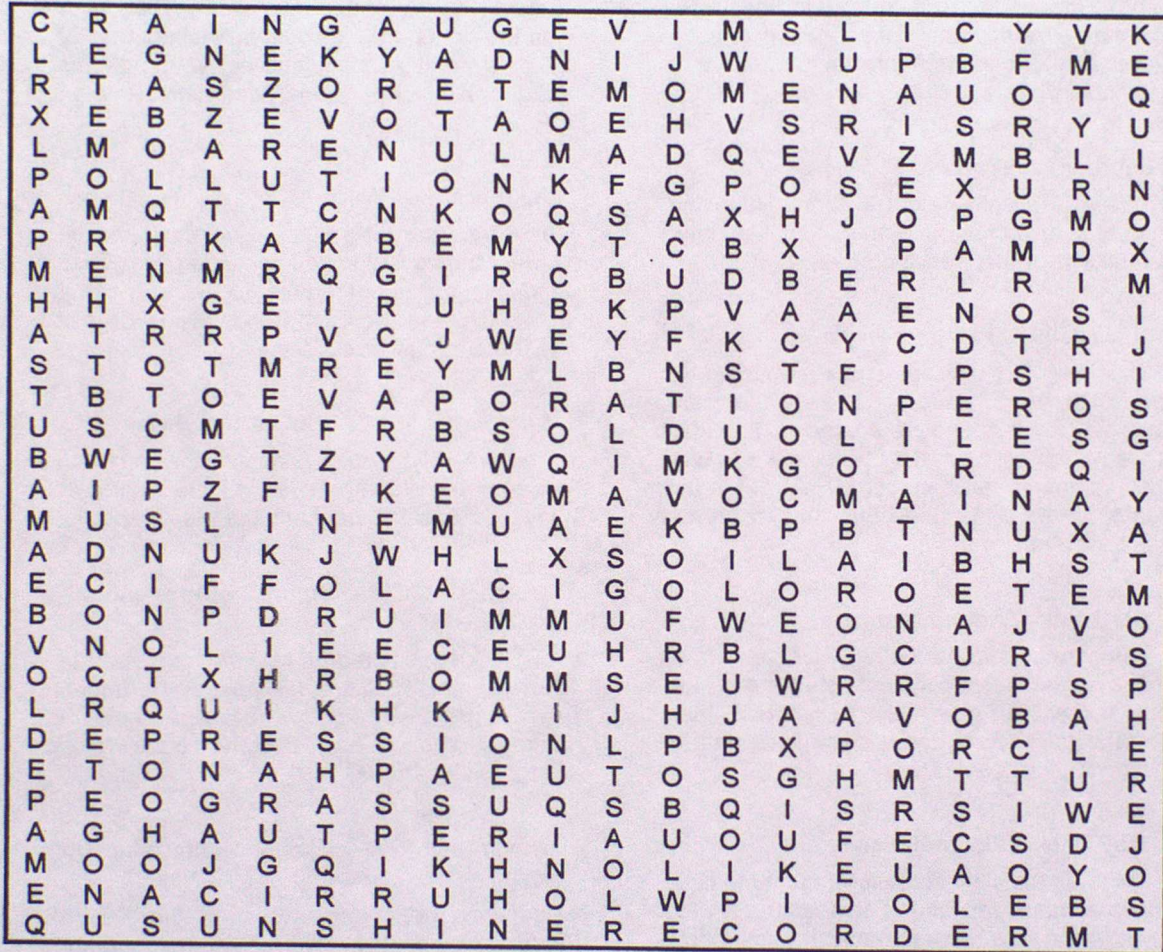
As forecast, the wind shift has occurred and we have been informed by radio that the boat will arrive in the morning. Another season is over on Skokholm, the island now returns to the wind and birds until March, when we will once again erect the Stevenson's Screen. We look forward to that day.

Skokholm Island (DCNN 8100)

WORDSEARCH

Nothing much on the television? then why not spend a relaxing few minutes attempting to solve the wordsearch? Just one clue, the words run in all directions including diagonally and backwards.

Best of luck!



METEOROLOGICAL OFFICE
MAXIMUM
MINIMUM
GRASS
CONCRETE
SOIL
THERMOMETER
MERCURY
HURRICANE

SUNSHINE RECORDER
RAINGAUGE
HUMIDITY
BAROGRAPH
ANEMOMETER
ISOBAR
THUNDERSTORM
PRECIPITATION
BARE PATCH

EQUINOX
EVAPORATION
TEMPERATURE
DEPRESSION
INSPECTOR
ATMOSPHERE
POLLUTION
BEAUFORT SCALE
MUSLIN

Summary of Weather 1994

Courtesy of Rod Davis

1994 - This was yet another exceptionally warm year, the warmest since the record year of 1990. It was also the wettest year in nearly three decades.



January 1994 - Very mild, wet and sunny

This was the second successive very mild month. However, the total rainfall for the winter so far (December and January) had already exceeded the average figure for the whole of the winter.



February 1994 - Cold and rather wet

This was a cold month, in contrast to the mildness of both December and January. Rainfall was rather above normal.



March 1994 - Wet and very mild

This was the seventh successive mild or very mild March and was also the third warmest March on record. A very wet final day of the month ensured that the rainfall was well above average and made March 1994 the wettest March since 1988. Sunshine, however, was near average.



April 1994 - Wet but sunny

Temperatures in April 1994 were somewhat above normal despite the cold start. It was the fifth successive month to be warmer than average and to have above average rainfall. In addition, it was comparatively sunny.



May 1994 - Cool, dull and wet

This was the sixth successive month to have above average rainfall but temperatures were somewhat below normal. It was the fourteenth dullest May since 1909.



June 1994 - Dry, sunny and very warm

This was the driest month so far this year, the first month to be drier than average since November 1993, and was the tenth driest June this Century. It was very warm and was the third month this year to be markedly warmer than average, the other two being January and March. June 1994 was also significantly sunnier than average.



July 1994 - Very warm, dry and sunny

This was one of the hottest July's on record since 1659, the hottest being July 1983, and was the driest and sunniest July since that of 1990. It was the second successive month this year to be warmer, drier and sunnier than average.



August 1994 - Warm

This was the third successive month to be warmer than average and continued this year's tendency for temperatures to be somewhat above average. No such trends are evident in regard to rainfall or sunshine.



September 1994 - Cool, dull and wet

This year, following a relatively warm and dry summer, autumn began in quite a different fashion with a wet, cool and dull September.



October 1994 - Sunny, but eventually rather wet

This was a sunny month but with temperatures near normal. Until the last few days, rainfall was significantly below average but by month's end it had become the wettest October since 1987.



November 1994 - Exceptionally mild, but dull

This was the mildest November in Central England since the start of the temperature series in 1659. It was milder than the second warmest November, that of 1818, by more than half a degree Celsius and almost as warm as October 1994, an unusual occurrence. Sunshine was well below normal but rainfall was close to average.



December 1994 - Very mild, sunny and wet

This was the second successive very mild month and was also a very wet one. On the other hand, it was surprisingly sunny.

An Away Day in Hull

The usual way of giving instruction to Climatological Observers, as many of you will know and have hopefully benefited from, is to come to the Meteorological Office College which is located at Shinfield Park just outside Reading, for a 4 day residential course.

In the Autumn I received a phone call from Shirley Hopkins at Bracknell saying that all the current observers at Hull were being replaced and that a new group of people, in this case Park Rangers, would need some training. I gave this no more thought until in early November Shirley phoned me again and asked that, as time was getting short, (the new observers at Hull were going to start on Monday 18th December) there were no vacancies on any Climatological Observer's Courses until Autumn 1995 and there were eight people who had never made an observation before, would I like to go to Hull and conduct the course 'on-site'.

I readily agreed to this and, after a lot of planning and preparation work, found myself in Pearson's Park in Hull on Tuesday 13th December.

The original venue for the course was to be in the Pavilion in Pearson's Park which is very handy for the observing enclosure. At the last minute it was realised that a group of Senior Citizens had the regular use of the Pavilion on Tuesday afternoons, so a different place had to be speedily found. I accepted the offer of the Victorian Conservatory which is also in Pearson's Park. This large, recently refurbished, Victorian construction certainly added an air of informality to the course! Inside the temperature appeared to be in the region of 25°C with the relative humidity about 85%. Palms, Yucca trees and large ferns were growing all around, there were cages of parakeets and budgerigars and aquariums full of tropical fish. The moderate rain drumming on the roof added to the rain - forest - like character and there



can be very few instructors who have delivered a teaching session with a large frog hopping about on the floor! As I have already said, it did help to make the course very informal and relaxing and, I think, created a good learning environment but I am not advocating the introduction of frogs to Shinfield Park as we already have enough trouble with squirrels!

In the event, there were ten participants of the course who were very typical of Climatological Observers everywhere. If anything was not understood questions were asked, the handout material was thoroughly studied and to a person, they were all very keen and enthusiastic (or very good actors).

Unlike a course run at the Meteorological Office College, the subjects taught at Hull were very 'site-specific' and all unnecessary topics (in this case things like the Evening Coded Message and measurement of sunshine) were not mentioned. Also, as the Hull observers will not be completing the Metform 3208B themselves, this was not covered. This streamlining allowed the course to be substantially shorter than one based at the Meteorological Office College. There are pros and cons for lecturing on-site but I am happy that, in this case, the course served its purpose.

I found the visit to Hull very useful and enlightening. After more than four years at the Meteorological Office College it was my first chance to see a Climatological observing site and to speak to the observers (although very new ones in this case) on their home territory. I was impressed with the enthusiasm and pride they showed towards their new work (which is a typical attitude of all Climatological Observers), appalled at the tales and sights of wanton vandalism that takes place at Municipal sites and mildly surprised that, when they were talking about the 'obs. office' the observers were referring to little more than a garden shed. It has certainly given me a deeper understanding of a non-Met. Office observing station.

Jem Gillham
Met Office College, Shinfield Park

★ NEWS OF STATIONS ★

NEW STATIONS

During January 1994

Llandello (Dyfed) - Mr M Ridley is the observer for Dyfed Council at Gelli Aur Country Park.

West Retford (Nottinghamshire) - Mr D Fellowes has moved from Clarborough to observe at this private station.

Rousdon (Dorset) - Students are observing at All Hallows School, supervised by Mr L Cruickshank.

Kirby Misperton (N Yorkshire) - Mr J Lund is the Observer at this private farm.

Dartington (Devon) - Mr R Stabback is the observer at Dartington Cattle Breeding Centre.

North Tamerton (Cornwall) - Mr A Hobbs is a private observer.

During February 1994

Ryhill (W Yorkshire) - Mr M Pears is the observer at this private farm.

During March 1994

Wallington (Northumberland) - Mr J Ellis is running a station for the National Trust.

Wycoller (Lancashire) - Mrs P Hodgson is the observer at this private farm.

During April 1994

Slimbridge (Gloucestershire) - Re-opened at the Wildfowl Trust with Mr K Pebody observing.

Ilfracombe (Devon) - Mr M Fowler is running a station at Ilfracombe Holiday Parc. Mr T Walthow is the observer.

During May 1994

Prestatyn (Clwd) - Re-opened by Ruddland District Council. The observer is Mr A Morse.

Walesby (Lincolnshire) - Mr N Cooper is the observer at this private farm.

During July 1994

Llangenny, Castell Corryn (Powys) - Mr J Harris is the new observer at this relocated private station.

During August 1994

Denstone (Staffordshire) - Mr J Jilbert is the observer at this private college.

Slimbridge, Six Acres (Gloucestershire) - Mr J Mace is a private observer.

During September 1994

Ulpha (Cumbria) - Mr and Mrs Temple run this station at their farm.

Heligan (Cornwall) - Mr T Smit is running the station at Heligan Manor. Messrs Leach and Howlett are the observers.

South Newington (Oxfordshire) - Mr J Britton is a private observer.

Ipstones Edge (Staffordshire) - Mr J Harper is a private observer.

During October 1994

Bowes (County Durham) - Mrs P Milner runs a station at this private farm.

Crossway, Home Farm (Gwent) - Mr D Pugh is the observer at this private farm.

Winterbourne Kingston (Dorset) - Mr J Webber is the observer at this private farm.

During November 1994

South Stowford (Devon) - Mr D L Reynolds is running a station at the Exmoor Bird Gardens.

Shuttleworth (Lancashire) - Mr H Magnall is a private observer.

During December 1994

Detton Hall (Shropshire) - Mr E Ratcliff is the observer at this private farm.

COMING SOON

Wiggonholt (Sussex)

Bwlch-y-Ffin (Dyfed)

Gwernogle, Penrhiwdilfa (Dyfed)

CLOSED STATIONS

Aigburth (Lancashire) - South Mersey College - No observer available.

Stanstead Abbots (Herts) - Thames Water - Closed due to lack of funds.

Waltham Cross (Herts) - Enfield Borough Council - Lack of funds for completion of forms.

Winfrith (Dorset) - Technical Centre - Staff cuts and lack of funds. Wins only now being reported.

Llangenny (Powys) - Outdoor Education Centre - Unable to find weekend observers. Station moved to Llangenny, Castell Corryn.

Spurn Point (Humberside) - Humber Pilotage Ltd. - Replaced by SAMOS at Donna Nook.

Duncton (Sussex) - School - Sudden closure of school.

Hadlow (Kent) - College of Agriculture - Constant vandalism and lack of funds.

Heydon (Herts) - Animal Centre - Lack of observers.

Nethercott (Shropshire) - Sadly, Mr Lennox has died and Mrs Lennox has decided to leave the farm.

Elmstone (Kent) - Due to retirement of Observer.

Clarborough (Nottinghamshire) - Moved house and station to West Retford.

CLIMATE STATIONS OPENED OR CLOSED DURING 1994



THE CLIMATOLOGICAL OBSERVER'S NETWORK AWARDS

The Following Observers Have Gained Awards for Long-term Co-operation

FOR 30 YEARS AND OVER

Mr J. Croft Rothamsted

FOR 20 YEARS AND OVER

Mr K. Cook	Low Etherley
Mr M.H. Atkinson	Marholm
Mr D. Iorns	Pershore
Mr I.H. Findlay	Widdybank Fell
Mr C. Russell	Bradford
Mr & Mrs Hazelden	Whitechurch
Mr M. Wickenden	East Malling

For 10 YEARS AND OVER

Mr J.M. Verrall	Bexhill
Mr I. Jones	Bronydd Mawr
Mr D. Wyatt	Buxton
Miss S. Mann	Cambridge NIAB
Mr M. Fairweather	Denver
Mr D. Hartley	Grizedale
Mr A. Ozanne	Minehead
Dr T.P. Burt	Oxford
Mr K. Spiers	Reading
Mrs J. Swallow	Ross On Wye
Mr R. Price	Rumleigh
Miss G. Boon	Sheffield
Mr A. Harris	Tottington Barn

NEWS OF OBSERVERS

Mr W.C. Hunt, who observes at Terrington St Clement, has been awarded the MBE for his services to the Met Office.

Mr R.D. Morris, observer at Botwnnog and Mr E. Clugston, observer at Elmstone, have retired.

Please let us know if **YOU** or your deputies are due an award for 10, 20 or 30 years. We are slowly bringing our records up to date but your help would be appreciated. (ED)

High Standard 1994 Awards

Bala Sluices	7866	Mr E. Jones
Bude	8987	Mr H. Kendall
Edge	4725	Mr M. Tudor
Halesowen	4839	Mr C. Roberts
High Hayrake	2031	Mr & Mrs T. Collins
Rustington	5421	Mr P. Collyer
Scolton	8156	Mr T. Theobald
South Shields	2179	Mr R. Nowlin
Sutton Bonington	4201	Mr A. Chester
Westgate	2115	Mr J. Say

The following observers were short-listed:

Cavendish	Mr M. Pizzey	Writtle	Mrs W. Hibbitt
East Malling	Mr M. Wickenden	Reading University	Mr K. Spiers
Hastings	Mr R. Garrad	North Wyke	Mr K. Tyson
Alice Holt Lodge	Miss L. Haydon	Penhalvean	Mr A. Wood
Keele University	Mr M. Edge	Southport	Mrs K. Mills
Penhow	Mr J. Pitcher	North Tamerton	Mr J.N.A. Hobbs

Awards are sent to the ten stations whose monthly returns are considered, by the Quality Control team, to be the neatest and most accurate. We try to reward EVERY good station eventually but there are always more than ten nominated so priority is given to stations who have not previously won an award. Being omitted from the list does not necessarily mean that the quality of your observations has decreased. (ED.)

WESTONBIRT ARBORETUM, TETBURY, GLOS.

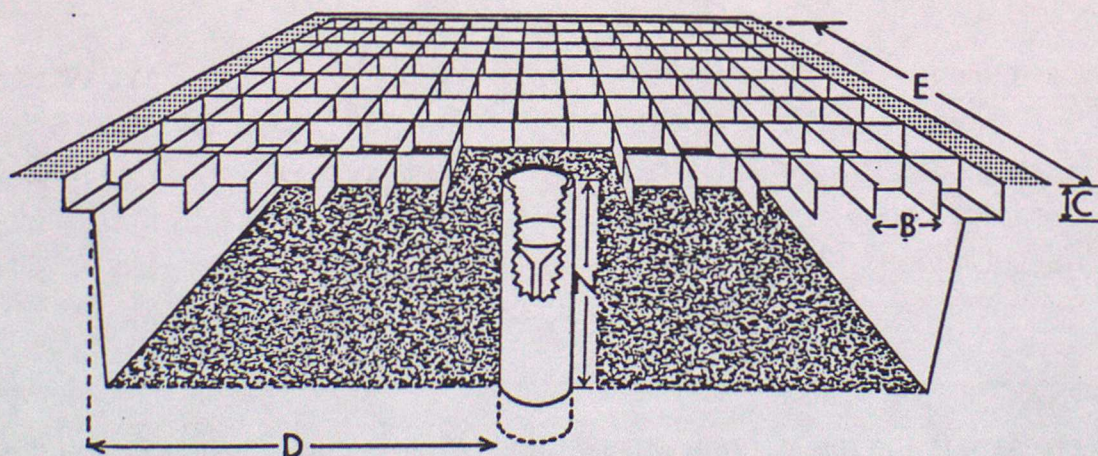
DCNN 4989. Standard rain-gauge 410162. Surface rain-gauge 410161.

The Arboretum (a tree garden) at Westonbirt was founded in 1829 by Robert Holford, a wealthy local landowner who planted his first trees in the open fields of his Cotswold estate. He planted many exotic trees which were then being introduced into this country from America and Asia. He was joined in the 1870's by his son George (later Sir George) who extended the collection into nearby Silk Wood, an oak and hazel coppice wood that dates back to at least medieval times. The Arboretum was further developed by Sir George's successor, the 4th Earl Morley, but fell into decline during and after the Second World War.

The Forestry Commission took over in 1956 and has restored the old walks and driveways, planted many new trees, catalogued the collection and opened it to the public. It now comprises some 17,000 specimen plants from most temperate areas of the world. The Arboretum is best known for its vivid display of autumn colour, including many Japanese maples, and the spring flowering of rhododendrons, azaleas, magnolias, cherries etc. Although little research work is undertaken here at the moment, one of the purposes of the Arboretum is to maintain a 'gene bank' of trees and shrubs, some species of which are endangered in their natural habitats.

Weather records of a sort have been kept here since 1880. From 1888 there is a daily record of rainfall, maximum and minimum temperature, wind direction and barometric pressure. A simple weather diary was kept up to 1908. Unfortunately there is next to no information on where or when the observations were made or what instruments were used. The rain gauge is known to have been sited for a while on top of a five feet high wall! Rainfall data has been sent to Wessex Water (now Wessex Rivers) since 1976, but the present Climatological (AG-Met) station was only set up in 1983. This comprises of screen, grass and soil thermometers, cup counter anemometer, sunshine recorder and two rain gauges. With only 11 years temperature records it is a little early to speak of average values, but the 30 year average annual rainfall is 840 mm, December and January usually being the wettest months with an average of 93 and 80 mm respectively. December 1993's total was 149 mm.

Most of the instruments at Westonbirt were brought from a Forestry Commission site at Crumblands in the Forest of Dean (Glos.) when the weather station closed in 1981. One of the more unusual items is a Surface Rain Gauge (SRG), sometimes referred to as a Ground Level Pit Gauge. This comprises a standard 5" diameter Met. Office gauge set in a square pit approximately 4' x 4' so that the rim of the gauge is level with the ground surface. The space between the edge of the pit and the gauge is covered by a plastic grid.



Ground-level rain-gauge with grid over pit

N= 30.5cm (12.0") B=> 5cm (1.97") C=> 5cm (1.97") D=> 60cm (23.6") E=> 60cm (23.6")

Whilst on an Observer's Course at Shinfield Park I was informed that the SRG avoided in-splashing and turbulence which, it was suggested, could occur around a standard gauge and that it usually collects about 6% more rainfall than the standard gauge. Recent enquiries to the Rainfall Section at Bracknell and the NRA indicated that although the data is being archived, the SRG figures are only being used as a check against the standard 5" gauge. I became interested in the variation in the difference between the catch of the two gauges, so I have tried to break down the figures for a sample year, 1992.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
5" Gauge (mm)	49.0	28.5	47.5	63.8	30.2	44.1	62.2	133.9	53.6	63.5	182.4	58.1	816.8
SRG: % diff.	1.4	9.5	8.8	4.4	4.6	1.8	4.3	3.3	6.5	2.4	3.9	4.8	4.2

On a daily basis the difference can vary much more. I have checked the daily percentage differences against wind direction at 0900 GMT, but can see no discernible "rainfall shadow" effects, though this is admittedly a fairly crude way of trying to detect it. I have also plotted percentage differences against mean wind speed (run of wind) over the same 24 hour period which seemed to show little relationship between the two. It was only when I tried out a simple assessment of the size of droplet/type of precipitation using the criteria shown below, based on those days when the weather diary was adequate, that I could detect any pattern.

1	2	3
DRIZZLE LIGHT RAIN	MODERATE RAIN LIGHT SHOWERS	HEAVY SHOWERS

Of the 78 rainfall days of 1992 when I was able to assess droplet size, the SRG recorded 12% or more rainfall on 16 days, of which 13 were mainly made up of drizzle. Of the 9 days of mainly showery rainfall the SRG catch never exceeded the standard 5" gauge by more than 1.5%, and on 2 of these occasions the SRG recorded up to 2.2% less than the standard 5" gauge.

However, on at least ten mainly drizzly days there was no difference between the two gauges. This suggests that there may be a tendency for the SRG to record more rainfall in comparison with the standard 5" gauge when the droplet size is small, possibly as a result of turbulence carrying some droplets away from the latter. By contrast, the larger droplets of showery rain may be splashing back from the ground to increase the standard gauges catch.

Are there many other SRG's in the UK? What sort of differences do their records show from standard 5" gauges? Is there any Met. Office evidence as to which type of gauge is the more accurate? I was interested to read in a 1992 report by Dr D A Bennetts of the Hadley Centre for Climate Prediction and Research, that some climate models for the 'Global Warming' scenario indicate an increase in the proportion of rainfall in the UK occurring in the form of showers. If this change did take place, is it possible that the characteristics of the standard 5" gauge might cause it to over record showery precipitation and so mask a real change in the total rainfall quantity?

Tim Trask
Met Observer
Westonbirt Arboretum.

In answer to Tim's questions, there are less than 20 Surface Rain Gauges (SRG) throughout England and Wales, including those located at purely rainfall sites. Although it is thought that the Northwest Water Authority recently undertook comparison trials of the standard 5" gauge and the SRG, at the time of going to press I have been unable to obtain the results.

During 1984 the World Meteorological Organisation (WMO) published a report (Instruments and Observing Methods, No 17) International Comparison of National Precipitation Gauges with a Reference Pit Gauge. Briefly, this report found that surface mounted gauges were likely to give different amounts on an average of 3% but this varied from 0 to 20%. The effect of wind speed was more evident at sites with low rainfall intensities. The report confirms the well known fact that rainfall as measured by the standard gauge elevated above ground is subject to a high percentage loss. This has been known for more than 200 years, at least since Heberden published his report in 1769. A gauge installed on a tower showed 87% less precipitation than that set up in a garden. Various theories have been used to explain this effect. In 1812 Howard stated that a gauge set up level with the ground and protected from splashing will show "true" amounts of rainfall. Since then the so-called "pit gauges" (referred to in the article as Surface Rain Gauge) have been used in comparison tests as a calibration instrument. The reason is that such a gauge, in contrast to the commonly used gauges elevated above the ground, is not subject to the deformation of the wind field above the gauge orifice and, consequently, the losses of the measured precipitation due to this effect are negligible. However, the losses due to evaporation, wetting and splashing may cause the pit gauge precipitation values to be smaller than the true values. (Ed).

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WANTED...WANTED...WANTED...WANTED...WANTED...WANTED...WANTED

One PTA

Not a Parent-Teacher Association, but a Pressure Tube Anemograph. Does someone have a Dines PTA to spare? If so Mr Goldsmith could be interested in giving this much respected equipment a caring and loving home. Please contact him direct at:
42 Parkway, Prestwich, Manchester. M25 8JB

WANTED...WANTED...WANTED...WANTED...WANTED...WANTED...WANTED

THE WEATHER OF 1994 IN CONTEXT

By Cedric Roberts, Halesowen, 4839

Situated on the south-western edge of the West Midlands conurbation, Halesowen is spared much of the extreme weather experienced by other Midland stations, notably on the Welsh border in Shropshire, or on the Warwickshire plateau. That said, 1994 has produced some quite exceptional features, several of which have broken long-standing records here, in a database extending back to 1946 for rainfall and 1956 in terms of general climate.

The year began with a very open January, there being only one incidence of snow or sleet, and no lying snow at all, making this the fourth successive snow-free January. Temperature, rainfall and sunshine were all above the 30-year means, and yet again pasture in the area was unseasonably lush for the time of year with cattle still able to graze freely.

Both in 1962 and 1967 there was untypically no incidence of January snow or sleet, whereas in 1979 it occurred on 15 occasions.

Additionally, January 1982 saw a continuous period of 31 hours snowfall in an exceptional spell of Arctic weather.

One has to look back to 1963 for a really severe January which had 28 air frosts and 31 days of lying snow. That month also saw air temperatures plunge to -13.9°C and the snow surface to -20.6°C . Yet it also provided the longest January dry spell of 14 days precipitation-free. Of particular significance in this severe spell was the evidence of "Permafrost", a phenomenon seldom seen in this country. The soil froze solid to a depth of around a foot resulting in garage doors jamming and verandah roofs cracking as floors rose with the ensuing expansion. Local Authorities faced massive increases in costs required to put right the widespread damage to road surfaces.

Earliest records for Halesowen date back to 1946, and the Winter of 1947 was the first to be observed in detail. In that year drifts lay over 12 feet deep, roads were closed for

days on end, people had to exit houses via igloo-style tunnels dug through snow which extended to the upper-floor windows, and I well recall digging down to reach the local road sign on its 8ft. post which lay beneath my feet! And all of this in a fuel shortage !!

With February a more normal "Winter" month ending as the most severe in 7 years, and with lying snow on 5 days, conditions were far more seasonable. The 14th saw a maximum air temperature no higher than -1°C , the month producing air frosts on 11 nights and ground frosts on 23. The Winter of 1993/1994 therefore finished as an average one, though temperatures were up on normal by as much as 0.5°C for the mean daily. Air frost was down, and ground frost up,

on the 30-year means giving a relatively open Winter with lying snow only half of expectation.

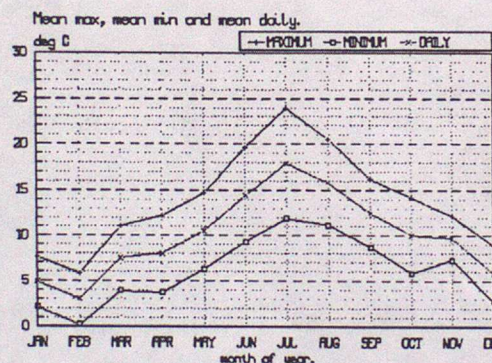
March was the mildest since 1991 and the fifth mildest on record here, with all temperatures up on normal by as much as 4°C . Though rainfall was about average, sunshine was 11% above expectation. No

hail, snow or sleet was observed and it was a particularly dry month. In contrast 1969 saw snow or sleet on 23 days, whilst snow lay on 9 mornings in March 1970

April began cold and unsettled with a centimetre of snow lying on Easter Monday, only the second such event in 39 years. Yet the night of the 28th saw the warmest April night on record here at 11.7°C . Such are the vagaries of the British climate. In contrast April 1983 had two days with lying snow, whilst the month in 1968 produced 10 air frosts, the worst to -5.4°C . It was 1968 which had a very delayed Spring and led to problems with horticulturists and farmers alike. Market gardening in the Vale of Evesham, which has to make an early start, was made almost impossible by the succession of night frosts.

The late-Spring month of May was cool and generally dull, though the 31st provided a glimpse of the Summer-to-come with a record-breaking 15.1 hours of bright sunshine. Ground frost was not prevalent, in

HALESOWEN CLIMATE STATION.
Mean air temperatures, 1994



total contrast to May 1975 when a severe frost on the night of the 31 May/01 June wiped out much of the produce in the Vale of Evesham and wide areas of Worcestershire and Warwickshire.

Spring 1994 was a very open one with air temperatures above the 30-year means in all but the highest maximum. The warmest day with 21.3 °C was, however, the lowest Spring maximum since 1986. Rainfall was below expectation and sunshine marginally above, though air frost was less than half of the normal for the season. Outside work was able to proceed apace, and local agriculture was well advanced.

Early Summer began pleasantly enough with June temperatures well above the 30-year means, peaking at 27.5 °C. Sunshine was also above expectation, 14 days seeing more than 9 hours each, 6 days with more than 12 hours each, and 4 with above 15 hours each. These were the best figures since the superb June of 1989. Incidentally, June 1957 saw 15 consecutive days with more than 12 hours sunshine each.

Severe thunderstorms lashed the area on the 24th giving half of the month's rainfall, killing a teenage girl in the West Midlands, and disrupting many local telephone exchanges.

July was the best of the Summer months, 11 days seeing maxima above 25 °C, the same as in the "Summer of Summers" 1976, but still 9 fewer than seen in 1983. Air temperatures peaked at 30 °C on the 12th and did not reach these values again. Sunshine was 30% above usual, the best since 1983, with 15 days providing more than 9 hours each, two fewer than the record 17 days in both 1989 and 1990. Rainfall was now deficient, resulting in problems for farmers, gardeners and builders alike, the latter finding house footings based on clay to be suffering from quite a degree of cracking unless adequate precautions were taken. It is perhaps worthy of note that Halesowen has seen 8 July ground frosts since 1956, the last on July 3rd. 1991.

The month of August lived up to its reputation as a poor month for holidays. Only one day was hot with an air maximum above

25°C, though 15 days did cap 21°C. To add to the poor feel of the month, the 31st produced the longest duration of August rainfall on record, whilst night-time temperatures were decidedly on the cool side. All of this fell far short of the superb August of 1976 with its 13 days above 25°C, and 15 days with more than 12 hours of bright sunshine. Counter-balancing this in 1976 was the severe drought and the almost continuous spate of fires in this area, particularly on Cannock Chase, and the Clent and Malvern Hills, some of which were accidental, others deliberately initiated.

However, in view of the well-above-average June and July weather, the Summer of 1994 was the best in the area for 18 years in general terms, lying marginally behind that of 1976. Holidaymakers remaining in this

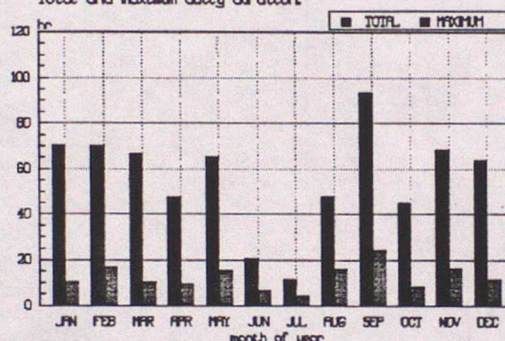
country were, for once, treated to warm, sunny days for almost two-thirds of the season. It was, eventually, the driest Summer since 1976 and the fifth sunniest on record. So good had it been that much of the grain crop in Hereford-Worcester had been harvested by the end of August.

Autumn began with quite unusual weather. September

was both wet and cool. The 14th turned out to be the wettest September day on record with 72.7mm of rain in 24 hours, which was also the second wettest day on record. In fact, in 42 hours of continuous rain from the 13th to the 15th, the total fall was 86.5mm. In complete contrast the September of 1959 totalled a mere 4mm, with 11mm in 1986 and 12mm in 1964. This year's heavy rainfall led to problems even in cities. Underpasses in the City of Birmingham were flooded to a depth of several feet, and properties along the Severn Valley prepared for yet another inundation.

Despite a wet end to the month, October was drier than average, with over two-thirds of the month's total fall occurring in the last 10 days. As a bonus, the 10.4 hours of sunshine on the 4th set a new October record in the area. On the down side, the clear skies led to low overnight temperatures, and eventual monthly means were depressed by as much as 1°C. In comparison, October 1st 1985 saw an air maximum of 26.3°C, the latest date on which the temperature has topped 25°C for this site.

HALESOWEN CLIMATE STATION.
Rainfall duration. 1994
Total and maximum daily duration.



Statistics turned turtle in November, which was an exceptional month. It was by far the warmest on file here, records being broken for the mean maximum, mean minimum and mean daily temperatures. Reputedly, the Midlands experienced its warmest November for over 300 years. Two nights were exceptionally mild, the 19/20th seeing an overnight minimum of 12.4°C and the 13/14th an overnight low of 13.2°C, both higher than the mean minimum for a typical July.

There was no air frost recorded, only the second such incidence in 39 years, with just 3 on the ground. In contrast, last year produced the coldest ever November day when the air failed to rise above -2°C at all, the month also recording 19 ground frosts. This November was a dull month, with 14 sunless days, mainly ensuing from the heavy blanket of cloud overlying the area for much of the period, and from a spell of anticyclonic gloom at the month's end.

Gardens continued to bloom, cattle to graze even on hill pastures, and wild-life normally seeking hibernation if not actually in it, still foraging for food in the hedgerow bottoms. All extremely pleasant, but quite unnatural.

December continued in the same vein with abnormally warm air from the Azores streaming across the country. Temperature records continued to tumble. The night of the 11/12th saw a minimum of 11.7°C, breaking

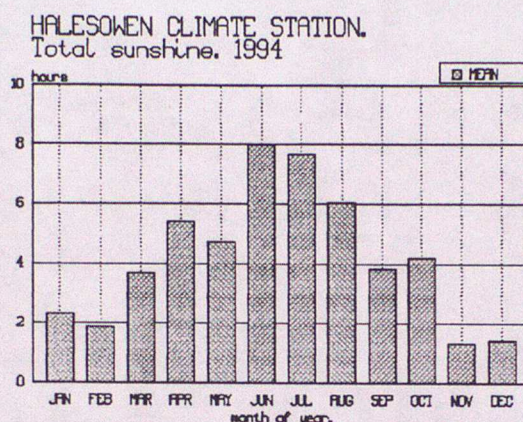
the record set in 1986. Though days were anything up to 7°C above average, the all-time high of 15.3°C set on 28 December 1974 was still not breached:- by a margin of less than one degree! Conditions reverted to normal from the 14th with ground frost becoming more prevalent as temperatures fell back. The month eventually ended with air frost at two-thirds of expectation and ground frost well above the 30-year mean.

Rainfall totals were well above normal with rain on 19 days. The end of the month saw widespread flooding along the Severn and Wye as surface water from the Welsh Hills (some areas had over 100mm of rain in three days) drained southwards.

Though not seeming sunny, the month broke about even, the number of sunless days being better than expectation. Snow was recorded on

one day (the 31st) though there was no incidence of either hail or thunder.

In summary, the year as a whole ended in twelfth position in the last 39 years, approximating to both 1967 and 1972. It was rather warmer than average, slightly drier and with well-above-average sunshine. A year when agriculture suffered no major weather-based catastrophe, holidaymakers were given a fair crack of the whip, and the public at large were unable to fire broadsides at those who have to attempt to forecast for this most fickle of climates. □



WANTED....WANTED....WANTED....WANTED....WANTED....WANTED....WANTED

Alistair Ozanne, the observer at Minehead (DCNN 8618) is interested in obtaining Monthly Weather Reports published prior to 1969. He is prepared to pay cash!

If you can help, please contact Alistair direct on (01643) 707459

He will be delighted to hear from you!

WANTED....WANTED....WANTED....WANTED....WANTED....WANTED....WANTED



SNOW

"Snow had fallen, snow on snow". The words of the Christmas Carol suddenly remind me that I promised Phil Wills that I would write a short article for the Newsletter on snow depth and other related topics.



The inclusion of snow information in the 0900 Climatological Observation is covered in

four different parts of the observation, - Present Weather, State of Ground, Snow Depth, and Precipitation Amount.

Let's consider snow as **Present Weather** first. If there are snow flakes falling from the sky **at the time of observation** the choice of weather codes are figures 68, 69, 83 and 84 if associated with rain; 70 to 75, 85 and 86 if it is snow by itself and 93, 94, 95 or 97 if the snow is associated with thunder conditions. Table 3 of Metform 3100A, "Instructions for Completing Monthly Returns", says that for code figures of 80 and above, the precipitation must come from 'cumuliform clouds'. These can usually be identified as either cumulus clouds, by their white tops which look like well formed cauliflowers, or cumulonimbus clouds, with tops that have spread out to resemble a blacksmith's anvil. The Observer's Handbook has some photographs to help identify cloud types, and also quite detailed descriptions of other forms of solid precipitation that might affect the Present Weather coding or that of 'The State Of Ground'.

For a **State of Ground** with snow or ice cover to be reported, the actual amount of the ground covered by a deposit is irrelevant. The question the observer must ask is 'are there any deposits of frozen precipitation on the ground', and then select a suitable code figure from Table 6 of the Instructions for Completing Monthly Returns. Remember that all forms of solid precipitation are included, (hail, ice pellets, snow grains etc.)



but not hoar frost. Remember also that when assessing the state of ground with snow or ice-cover, the observer must look beyond the observation enclosure to an open area that is representative of the station. Chapter 6 of the Observer's Handbook is the place to look for further information on this topic.

Unlike state of ground, **Measurement Of Snow Depth** is dependent on the total amount of ground covered by snow. The rules in the Observer's Handbook say that when more than half of the ground is covered in level snow, the depth should be measured in centimetres. This means that if you report a state of ground code of 0, 1 or 5 from Table 6 of the Instructions for Completing Monthly Returns, you **must not** report a snow depth. When measuring snow depth, try to find areas that are truly representative of your observing site, where the snow is lying level, undrifted and not scoured by the wind, and as close to the raingauge as possible. Once you have located such sites, take three or more measurements and report the mean of all of them. The physical process of measuring snow depth is easy enough. Push a ruler, held at right angles to the ground, down into the snow until the ground is reached, and then read off where the snow has come up to on the ruler. The depth of the snow is reported in whole centimetres using three figures, with depths of more or less than a whole centimetre 'rounded' to the nearest whole centimetre as follows. Decimals 0.1, 0.2,



0.3 and 0.4 are thrown down, (e.g. a measured depth of 7.3cm would be entered in the Pocket Register as 007), whilst 0.5, 0.6, 0.7, 0.8 and 0.9 are thrown to the higher whole number, (e.g. a measured depth of 7.5cm would be entered in the Pocket Register as 008). The observer must take care when measuring snow depth. Make sure that the ruler does not get pushed into the ground below the snow as this would give a greater apparent depth. Also, check that the ruler being used has been adapted to read zero at its end as a lot of rulers do not start their measuring graduations until about 0.5cm from the end. This latter case would make the snow appear less deep.

Thinking about deep snow, do you know exactly where your grass minimum thermometer is located in your enclosure? If there is more than about 4 inches of snow this, and any other pieces of ground measuring equipment, can easily get covered and lost. The smart way of making sure you can find them is to have their positions permanently marked with pieces of broom handle or dowel rod knocked upright into the ground close to the thermometers. If these stick up about 12 inches above the ground they will help find

your thermometers. The other way of finding the thermometers is to use your ears. You walk round the enclosure to where you think the grass minimum is located and listen for the crunch of breaking glass as you step on the thermometer. As the thermometers cost in the region of £50 each, I know which system I would recommend.

As regards the **Precipitation Amount**, or measuring solid precipitation to give a liquid equivalent, it is too large a topic to cover in this Newsletter. My best advice is to refer you to The Observer's Handbook, Chapter 9, Section 4. which is headed 'Measurement of

Solid Precipitation' and contains all the information needed.

The Observer's Handbook, Chapter 9, Section 4 contains the line "Reliable measurements (of snowfall in stronger winds) are very difficult and depend much on the zeal and skill of the observer." I have put the brackets in, because I believe that it is not only reliable snowfall measurements that depend on the skill and zeal of the observer but the complete Climatological Observation. Remember that on the next cold and wet Sunday morning, when 0900 is rapidly approaching and an extra cup of tea in bed seems a far better option than going outside to make the observation!

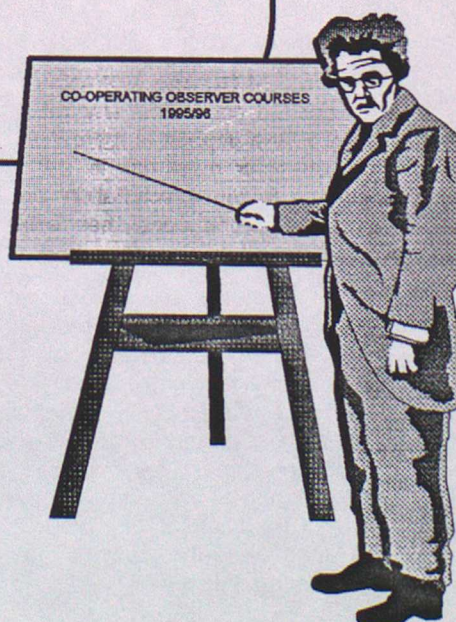
Jem Gillham
(Met Office College, Shinfield Park)



CO-OPERATING OBSERVER COURSES 1995/96

The dates shown below are provisional. All stations will receive written confirmation along with application forms during April 1995.

C01/95	31st OCTOBER - 3rd NOVEMBER 1995
C02/95	30th JANUARY - 2nd FEBRUARY 1996
C03/95	27th FEBRUARY - 1st MARCH 1996
C04/95	26th MARCH - 29th MARCH 1996
C05/95	21st - 24th MAY 1996



El Niño - by Richard Gosnell, Quality Assurance

Did you know that the sea's surface temperature in the eastern equatorial Pacific affects the yield of a year's crops in faraway Somalia? Well, it appears so, according to recent research into the world's climate. It just goes to show that the mundane task of measuring sea temperature (traditionally with a rope and bucket) is important.

Here at Bracknell Met Office we receive about a million weather reports from ships per year from all the oceans of the world. If we include data from other weather centres world-wide the total is perhaps about 5 million! The job of quality control is to sift readings, from land as well as maritime stations, removing those which are definitely wrong and leaving those which really tell us about unusual conditions that depart from the average.

Going back to the Pacific, the sea temperatures become unusually high around Christmas for several years at a stretch. This is called 'El Niño' - pronounced el ninyo - (Spanish for The Child), the name

originally given by the local inhabitants to a weak warm ocean current flowing southwards along the coast of Ecuador and Peru around Christmas. (*The El Niño Southern Oscillation is the term now applied to a more extensive, intense and prolonged warming of the eastern tropical Pacific Ocean occurring every few years which is associated with major anomalies in the patterns of atmospheric circulation and rainfall - Ed*). During an El Niño the whole tropical climate appears to be

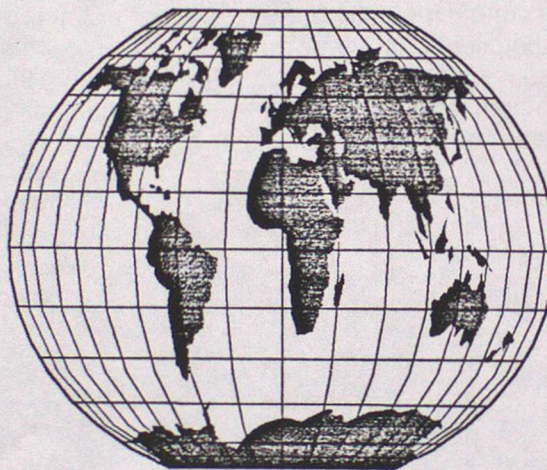
distorted from its long term average state. Droughts appear in Africa, such as the much publicised one in the Sahel region on the southern edge of the Sahara.

El Niño even seems to affect the number of hurricanes each year in the Caribbean, Bahamas and south-east USA. At any

rate the occurrence of hurricanes has been markedly less in years that had an El Niño. For several years now there have been many fewer of these storms and this period also coincides with a run of El Niño events. Admittedly an individual hurricane can be just as severe as ever. A hurricane mops up a great amount of

energy from the sea and also

stirs up the water, thus mixing in cooler water from below, during the raging winds. As a result the sea is left cooler in the wake of a passing hurricane so another one is less likely to come that way until things have warmed up a bit. It is possible, therefore, that even though there have been fewer hurricanes of late the chance of a severe one is still about the same.



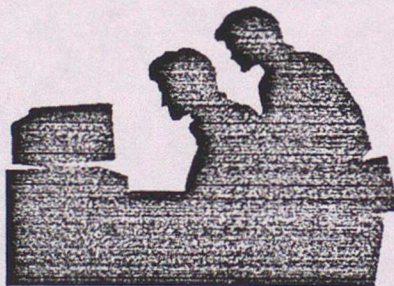
One can see the importance of accurate weather observations goes beyond merely knowing who had the hottest day, or the wettest winter etc. Long term climate change is nowadays of increasing economical and political importance.

SOMETHING OF HOW THE OTHER HALF LIVE?
or
**WHAT YOU ALWAYS WANTED TO KNOW ABOUT QUALITY CONTROL - BUT WERE
AFRAID TO ASK**

Phil Wills has asked me to contribute to this Newsletter. What to say? He only wants it yesterday etc. etc.! This is a tale of QC (Quality Control). I'm Anne Tunnicliff and it is my job to make sure the QC section runs as smoothly as possible. The aim of the section is to ensure that the data provided is the most accurate available. It is therefore our task to check and correct where necessary all data before it is made available to the user via the Climatological Data Bank (CDB).

Let me first introduce my colleagues. Many of you have attended courses at Shinfield and hence have visited Headquarters, received a handout and have met the Three Musketeers or, Jan Lewandowski (Wales and the West of England north of the Bristol Channel), Dave Forrester (the East of England, north of the Thames) and John Spafford (England, south of the Thames and the Bristol Channel) as they are better known. These three chaps check all your data. The data produced by observers in Scotland and Northern Ireland are dealt with by our Colleagues at the Climate Offices in Edinburgh and Belfast.

During the first few days of each month, there is a knock or three on the door which is flung wide to reveal Nancy (the post lady) 'Here you are Christine, don't say you don't want them!' Christine (the admin. lady) is now buried under a two foot high pile of mail - well, her in-tray is. This will happen two or three times during the next couple of days. Along with all (I hope) of your three hundred-odd forms, are others from Met Offices all over the UK and they all need to be sorted out, right Musketeer. Some diskettes from some of Rivers Authorities (NRA) over two thousand rainfall all have to be checked!



All written observations typed (or keyed as it is so that the data can be of the Climatological Data

procedure is contracted out to a specialist company and, since they are not expected to understand what they see, we have to make sure that everything on the forms is technically correct. This is why the forms need to be correctly entered without spurious messages. We would request that you do not send us photocopies of the completed form 3208B, as unfortunately, during the copying process the grey zeros are lost. This means that someone has to re-insert them on the form before they can be keyed. All of the header information is needed and sometimes, believe it or not, the month or year are missing or words don't match figures or the DCNNs may have been left off or are even wrong! So Jan, Dave and John 'edit' the forms first.

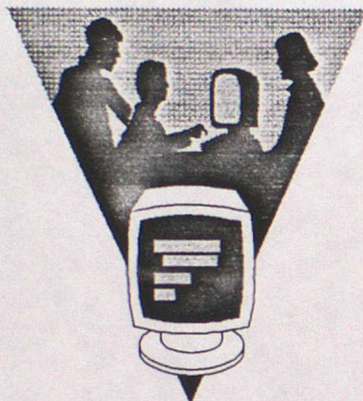
and recordings received are termed) onto a magnetic tape loaded into the correct parts Bank. Nowadays this

OP's newest recruit, a flaming red-head who goes by the name of Jon, joined us this year to manage the transfer of forms to and from the keying contractors. In addition to the data generated at Bracknell, Jon also deals with the data received from Edinburgh, Belfast AND the rest of the world! As well as processing forms that have been received by you the Climat Network Observer, there are the analysed results from hourly recordings of wind, rain and sunshine at Met Offices throughout the country. They all have to be checked before being keyed into the data base.

Bracknell is one of two world centres for the archiving of Marine Data which means there are an awful lot of observation log books received from ships that have been here, there and everywhere. They make an observation every six hours normally, but in bad weather this interval is reduced to three hourly in order to provide a more accurate picture of the prevailing conditions. You can imagine how many books there could be. Luckily, much of the Marine data is received already loaded on large magnetic tapes. Just as well when something like a million ship observations are processed each year! Colin Hardacre

has the joy of checking whether the thermometer is downwind from the funnel or whether the ship is all at sea! Even sophisticated message sending can get corrupted and consequently imply that the ship is perhaps reporting from the middle of the Sahara!

The large tape containing the keyed data files is read into the CDB each Wednesday morning and then the "Three M's" can begin the run of programs to check that all is well. In order to obtain the best out of these programs, all the expected information should be available. This is why it is so important that your forms are received within two or three days after the end of the month in question. Not only do the comparison programs work better, but people get a feel for the weather during the month they are working with. If they have to go back six months or more for a late form, they have to track back for just one form and run extra programs. More importantly it means that data which may be of value to long term climatological research is not available to the user.



You will now be aware that, after the keying change last year due to economic pressure, 1995 heralds more changes. We hope that you will prefer the printouts of your weather record, looking slightly different from the 3208B but containing what you send us and a little more. The terms dewpoint, vapour pressure and relative humidity are described in the *Observers Handbook* if you would like a reminder. Having COSMOS (*The Met. Office computer - Ed.*) mark the days which have had values amended saves Jan, Dave and John the best part of a week each month writing letters. We hope that this change will not make you feel isolated and we are still very happy to talk to you on the telephone should you have any queries.

Lastly a plea from Jan and co. Please, please, please try to take care of your ice bulbs! DO use distilled or purified water as impurities prevent freezing at the correct temperature. DO NOT allow the wick to dry out! Should you decide to 'water' the wet bulb before reading, please allow at least half an hour before reading. Please DO NOT WORRY if the wet bulb refuses to ice when the dry bulb temperature is near or below zero, or when there is fog or it is very misty. Ice bulbs can be difficult to induce in these circumstances. A note with the weather diary informing us of difficulties experienced trying to obtain an ice bulb would be appreciated.

Above all, thank you for your co-operation and I hope that you enjoy your observing. I certainly miss the fresh air and variety that I used to relish, in varying degrees I admit, when observing on windswept airfields. I even miss the dry cold easterly wind in winter when there seemed to be nothing between me and Siberia! There's nowt so strange.....□

Anne Tunnicliff, Met O OP3a

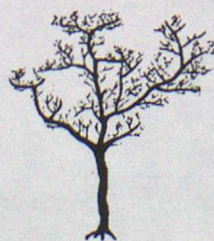
WANTED...WANTED...WANTED...WANTED...WANTED...WANTED...WANTED

NEWSLETTER 25

Yes that's right, I am inviting articles for the next Newsletter, to be published in February 1996. If you have a weather related story or project that you would be prepared to share with the rest of the Network please let me know between now and approximately November 1995 and I will reserve some space!

The Editor
Climat Observers Newsletter

WANTED...WANTED...WANTED...WANTED...WANTED...WANTED...WANTED



CLIMATOLOGICAL OBSERVERS' NETWORK
NEWSLETTER 1995

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